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QUERIES AND INFORMATION.

Conducted by J. M. COLAW, Monterey, Va. All contributions to this department should be sent to him.

The American Mathematical Monthly in Spain.

The leading article of the Spanish Journal "El Progreso Mathematico" for March 1895 speaks of "la rica literatura que forman en conjunto las obras escritas en estos ultimos anos acerca de los diversos sistemas geometricos de los Sres. Flye Ste. Marie, Frischau, Erdmann, Lipschitz, Scheffler, Killing, Battaglini, Cayley, Klein, Poincare, Bruce Halsted(* * *), Vassilief;" and the note is "(* * *) Este ilustrado profesor de la Universidad de Texas publica actualmente una serie de articulos sobre la Geometria non-Euclidea en the *American Mathematical Monthly*."

The trisection problem is considered in Petersen's Methods and Theories (London 1879) p. 101. Also in the recently published Vortrage uber angewahlte Fragen der Elementargeometrie, von. F. Klein, ausgearbeitet von F. Torgert (Leipzig 1895), p. 11.

DAVID E. SMITH.

I reply to W. E. Heals inquiry on page 171 of AMERICAN MATHEMATICAL MONTHLY as to the impossibility of trisecting an angle with rule and compass as follows:

We can draw only circles and straight lines with a compass and rule and can therefore express by that means only the roots of quadratics. By means of the compass we can find the square root. But the equation $\sin^3 A = 3 \sin A - 4 \sin^3 A$ is a cubic and we have no method of finding the cube root by means of a compass.

OTTO CLAYTON.

NOTES ON THE DEMONSTRATION OF EUCLID'S ELEVENTH AXIOM.

NOTE 1.—To complete my demonstration in the May No. *GF* (in *third*) should be solved equal to the given *constant DA*. If *GF* be supposed greater than *DA*, then *GD* and *FA* would converge toward *DA*, and when folded over on axis *DA*, the corresponding lines *DM* and *AN* would diverge, making *GDM* and *FAN* broken lines, whereas, by hypothesis, they are straight lines. Similarly, if *GF* be supposed less than *DA*.

NOTE 2.—Since mathematicians differ about the definition of parallels, might not the term *parallel* be dispensed with and *equidistant* be substituted?

WARREN HOLDEN,

Girard College, Philadelphia.

ANSWER TO "READER'S" QUERY.

Some one signing himself "Reader" in the February issue, 1895, makes inquiry as to the meaning of the word "psendo spherical". He will find an answer to that part of his question in my article in the May No. of the MONTHLY. Numerous points of "difference" between the Euclidian and non-Euclidian Geometry are also indicated.

"Reader" will find the term "Hyper-space" in the article on "Measurement" by R. S. Bell in the Encyclopaedia Britannica, Ninth Edition. I do not find the expression "Ideal Space" in either of my articles in the November issue of last year. Kant maintained that space is purely subjective. Fichte reasoned that if space is subjective, the material bodies contained in it must also be subjective. This is Idealism. The Kantian view of space may appropriately be called Idealistic inasmuch as it is avowedly purely subjective.

JOHN N. LYLE.

 EDITORIALS.

THE MONTHLY will be published at Kidder until January after which it will probably be published at Springfield.

DR. F. P. MATZ has accepted the Professorship of Mathematics and Astronomy in Irving College, Mechanicsburg, Pennsylvania. This is one of the most flourishing Colleges in Pennsylvania; and Dr. Matz is the recipient of a handsome salary, as well as the holder of a very desirable position.

DR. ALEXANDER MACFARLANE, a contributor to the MONTHLY, and a distinguished Physicist and Electrician, formerly Professor of Physics in the University of Texas, has accepted the chair of Lecturer in Electrical Engineering in Lehigh University. Dr. Macfarlane's reputation as an investigator in Mathematical Physics is international and the University to which he has been called is to be congratulated for selecting such an able man.

DR. E. S. LOOMIS, for the last ten years professor of Mathematics and principal of the Normal Department in Baldwin University, has been elected Professor of mathematics in the West High School of Cleveland. This appointment, coming as it does, at this time, from our neighboring city of Cleveland, cannot be considered otherwise than as a vindication of Dr. Loomis' eminent ability as a teacher of mathematics, and also shows that notwithstanding his doubts that Jonah "swallowed the whale," the Cleveland Educational authorities believe him still capable of teaching that science.—*Bered Advertiser*.

We congratulate the Doctor upon his good fortune in being called to a position in which his superior ability will be fully appreciated.

THE National Normal University, Lebanon, Ohio, of which Dr. Alfred Holbrook is the President, recently conferred (with the highest distinction) the Degree of *Doctor of Science* (Sc. D.), upon our valued contributor, F. P. Matz. The subjects of the theses submitted by him, were: (1) *The Conditions*